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Stephen Aylward
Lubomir M. Hadjiiski
Editors

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Contents

Part One

- xix *Conference Committee*
- xxiii *2014 Medical Imaging Paper Award Recipients*

HEAD, NECK, AND NOVEL METHODS

- 9035 02 **Early detection of Alzheimer's disease using histograms in a dissimilarity-based classification framework** [9035-79]
A. Luchtenberg, R. Simões, MIRA Institute for Biomedical Technology and Technical Medicine, Univ. Twente (Netherlands); A.-M. van Cappellen van Walsum, MIRA Institute for Biomedical Technology and Technical Medicine, Univ. Twente (Netherlands) and Radboud Univ. Nijmegen Medical Ctr. (Netherlands); C. H. Slump, MIRA Institute for Biomedical Technology and Technical Medicine, Univ. Twente (Netherlands)
- 9035 03 **Multi-fractal texture features for brain tumor and edema segmentation** [9035-2]
S. Reza, K. M. Iftikharuddin, Old Dominion Univ. (United States)
- 9035 04 **Ischemic stroke lesion segmentation in multi-spectral MR images with support vector machine classifiers** [9035-3]
O. Maier, M. Wilms, J. von der Gablentz, U. Krämer, H. Handels, Univ. zu Lübeck (Germany)
- 9035 05 **A ROC-based feature selection method for computer-aided detection and diagnosis** [9035-4]
S. Wang, Fourth Military Medical Univ. (China) and Xidian Univ. (China); G. Zhang, Q. Liao, Fourth Military Medical Univ. (China); J. Zhang, Xidian Univ. (China); C. Jiao, H. Lu, Fourth Military Medical Univ. (China)
- 9035 06 **Change detection of medical images using dictionary learning techniques and PCA** [9035-5]
V. Nika, York Univ. (Canada); P. Babyn, Univ. of Saskatchewan (Canada); H. Zhu, York Univ. (Canada)
- 9035 07 **Segmentation and automated measurement of chronic wound images: probability map approach** [9035-6]
M. F. Ahmad Fauzi, The Ohio State Univ. (United States) and Multimedia Univ. (Malaysia); I. Khansa, K. Catignani, G. Gordillo, The Ohio State Univ. (United States) C. K. Sen, The Ohio State Univ. Wexner Medical Ctr. (United States) and The Ohio State Univ. (United States)
M. N. Gurcan, The Ohio State Univ. (United States)

PROSTATE AND COLON I

- 9035 08 **Reference-tissue correction of T₂-weighted signal intensity for prostate cancer detection** [9035-7]
Y. Peng, The Univ. of Chicago (United States) and Beijing Jiaotong Univ. (China); Y. Jiang, A. Oto, The Univ. of Chicago (United States)
- 9035 09 **Computer extracted texture features on T2w MRI to predict biochemical recurrence following radiation therapy for prostate cancer** [9035-8]
S. B. Ginsburg, M. Rusu, Case Western Reserve Univ. (United States); J. Kurhanewicz, Univ. of California, San Francisco (United States); A. Madabhushi, Case Western Reserve Univ. (United States)
- 9035 0A **Multi-atlas propagation via a manifold graph on a database of both labeled and unlabeled images** [9035-9]
Q. Gao, T. Tong, D. Rueckert, P.J. Edwards, Imperial College London (United Kingdom)
- 9035 0B **Automated polyp measurement based on colon structure decomposition for CT colonography** [9035-10]
H. Wang, The State Univ. of New York (United States); L. C. Li, College of Staten Island, SUNY (United States); H. Han, H. Peng, B. Song, The State Univ. of New York (United States); X. Wei, New York City College of Technology (United States); Z. Liang, The State Univ. of New York (United States)
- 9035 0C **An improved high order texture features extraction method with application to pathological diagnosis of colon lesions for CT colonography** [9035-11]
B. Song, Stony Brook Medicine (United States) and Stony Brook Univ. (United States); G. Zhang, H. Lu, Fourth Military Medical Univ. (China); H. Wang, F. Han, Stony Brook Medicine (United States); W. Zhu, Stony Brook Univ. (United States); Z. Liang, Stony Brook Medicine (United States)

VESSELS, HEART, AND EYE I

- 9035 0D **An image-based software tool for screening retinal fundus images using vascular morphology and network transport analysis** [9035-12]
R. D. Clark, Constellation Research, Inc. (United States); D. J. Dickrell, Univ. of Florida (United States); D. L. Meadows, Constellation Research, Inc. (United States)
- 9035 0E **An automatic machine learning system for coronary calcium scoring in clinical non-contrast enhanced, ECG-triggered cardiac CT** [9035-13]
J. M. Wolterink, T. Leiner, R. A. P. Takx, M. A. Viergever, I. Išgum, Univ. Medical Ctr. Utrecht (Netherlands)
- 9035 0F **Automated coronary artery calcification detection on low-dose chest CT images** [9035-14]
Y. Xie, Cornell Univ. (United States); M. D. Cham, C. Henschke, D. Yankelevitz, Icahn School of Medicine at Mount Sinai Hospital (United States); A. P. Reeves, Cornell Univ. (United States)

- 9035 OG **Supervised pixel classification for segmenting geographic atrophy in fundus autofluorescence images** [9035-15]
Z. Hu, Doheny Eye Institute (United States); G. G. Medioni, M. Hernandez, The Univ. of Southern California (United States); S. R. Sadda, Doheny Eye Institute (United States) and The Univ. of Southern California (United States)

LUNG, CHEST, AND ABDOMEN I

- 9035 OI **Detection, modeling and matching of pleural thickenings from CT data towards an early diagnosis of malignant pleural mesothelioma** [9035-17]
K. Chaisaowong, RWTH Aachen (Germany) and King Mongkut's Univ. of Technology (Thailand); T. Kraus, Univ. Hospital Aachen, RWTH Aachen Univ. (Germany)
- 9035 OJ **Automatic localization of IASLC-defined mediastinal lymph node stations on CT images using fuzzy models** [9035-18]
M. M. S. Matsumoto, N. G. Beig, J. K. Udupa, S. Archer, D. A. Torigian, Univ. of Pennsylvania (United States)
- 9035 OK **Computer-aided detection of malpositioned endotracheal tubes in portable chest radiographs** [9035-19]
Z. Huo, Carestream Health, Inc. (United States); H. Mao, Rochester Institute of Technology (United States); J. Zhang, Carestream Health, Inc. (United States); A.-M. Sykes, Mayo Clinics (United States); S. Munn, Tufts Medical Ctr. (United States); J. Wandtke, Univ. of Rochester Medical Ctr. (United States)
- 9035 OL **Artificial neural networks for automatic modelling of the *pectus excavatum* corrective prosthesis** [9035-20]
P. L. Rodrigues, A. H. J. Moreira, ICVS/3B's (Portugal) and Univ. do Minho (Portugal); N. F. Rodrigues, ICVS/3B's (Portugal) and Polytechnic Institute of Cávado and Ave (Portugal); A. Pinho, J. C. Fonseca, Univ. do Minho (Portugal); J. Correia-Pinto, ICVS/3B's (Portugal); J. L. Vilaça, ICVS/3B's (Portugal) and Polytechnic Institute of Cávado and Ave (Portugal)
- 9035 OM **Mediastinal lymph node detection on thoracic CT scans using spatial prior from multi-atlas label fusion** [9035-21]
J. Liu, J. Zhao, J. Hoffman, J. Yao, W. Zhang, E. B. Turkbey, S. Wang, C. Kim, R. M. Summers, National Institutes of Health (United States)
- 9035 ON **Estimation of cartilaginous region in noncontrast CT of the chest** [9035-22]
Q. Zhao, N. Safdar, Children's National Medical Ctr. (United States); G. Yu, Children's National Medical Ctr. (United States) and Princeton Univ. (United States); E. Myers, A. Sandler, M. G. Linguraru, Children's National Medical Ctr. (United States)

VESSELS, HEART, AND EYE II

- 9035 OO **A joint estimation detection of Glaucoma progression in 3D spectral domain optical coherence tomography optic nerve head images** [9035-113]
A. Belghith, C. Bowd, R. N. Weinreb, L. M. Zangwill, Hamilton Glaucoma Ctr., Univ. of California, San Diego (United States)

- 9035 OP **Automated aortic calcification detection in low-dose chest CT images** [9035-24]
Y. Xie, Cornell Univ. (United States); Y. M. Htwe, Icahn School of Medicine at Mount Sinai Hospital (United States); J. Padgett, Cornell Univ. (United States); C. Henschke, D. Yankelevitz, Icahn School of Medicine at Mount Sinai Hospital (United States); A. P. Reeves, Cornell Univ. (United States)
- 9035 OQ **Segmentation and separation of venous vasculatures in liver CT images** [9035-25]
L. Wang, C. Hansen, S. Zidowitz, H. K. Hahn, Fraunhofer MEVIS (Germany)
- 9035 OR **Computerized luminal analysis for detection of non-calcified plaques in coronary CT angiography** [9035-26]
J. Wei, C. Zhou, H.-P. Chan, A. Chughtai, S. Patel, P. Agarwal, J. Kuriakose, L. Hadjiiski, E. Kazerooni, Univ. of Michigan (United States)
- 9035 OS **Automated discovery of structural features of the optic nerve head on the basis of image and genetic data** [9035-27]
M. Christopher, L. Tang, J. H. Fingert, T. E. Scheetz, The Univ. of Iowa (United States); M. D. Abramoff, The Univ. of Iowa (United States) and US Department of Veterans Affairs (United States)

BREAST I

- 9035 OT **Using undiagnosed data to enhance computerized breast cancer analysis with a three stage data labeling method** [9035-28]
W. Sun, T.-L. Tseng, The Univ. of Texas at El Paso (United States); B. Zheng, Univ. of Oklahoma (United States); F. Lure, The Univ. of Texas at El Paso (United States); T. Wu, Arizona State Univ. (United States); G. Francia, S. Cabrera, J. Zhang, M. Vélez-Reyesv, The Univ. of Texas at El Paso (United States); W. Qian, The Univ. of Texas at El Paso (United States) and Northeastern Univ. (China)
- 9035 OW **Fully automated segmentation of whole breast in MR images by use of dynamic programming** [9035-31]
L. Jiang, Y. Lian, Shanghai Advanced Research Institute (China); Y. Gu, X. Hu, FuDan Univ. (China); Q. Li, Shanghai Advanced Research Institute (China)
- 9035 OX **Sparse representation of multi parametric DCE-MRI features using K-SVD for classifying gene expression based breast cancer recurrence risk** [9035-32]
M. Mahrooghy, A. B. Ashraf, D. Daye, C. Mies, M. Rosen, M. Feldman, D. Kontos, Univ. of Pennsylvania (United States)
- 9035 OY **Digital breast tomosynthesis: effects of projection-view distribution on computer-aided detection of microcalcification clusters** [9035-33]
R. K. Samala, H.-P. Chan, Y. Lu, L. Hadjiiski, J. Wei, M. Helvie, Univ. of Michigan (United States)

PROSTATE AND COLON II

- 9035 0Z **Reducing false positives of small bowel segmentation on CT scans by localizing colon regions** [9035-34]
W. Zhang, J. Liu, J. Yao, R. M. Summers, National Institutes of Health (United States)
- 9035 10 **An adaptive approach to centerline extraction for CT colonography using MAP-EM segmentation and distance field** [9035-35]
H. Peng, Stony Brook Univ. (United States); L. C. Li, CUNY (United States); H. Wang, H. Han, Stony Brook Univ. (United States); P. J. Pickhardt, Univ. of Wisconsin School of Medicine and Public Health (United States); Z. Liang, Stony Brook Univ. (United States)
- 9035 11 **Improved parameter extraction and classification for dynamic contrast enhanced MRI of prostate** [9035-36]
N. F. Haq, P. Kozlowski, E. C. Jones, S. D. Chang, S. L. Goldenberg, M. Moradi, The Univ. of British Columbia (Canada)
- 9035 12 **Distinguishing prostate cancer from benign confounders via a cascaded classifier on multi-parametric MRI** [9035-37]
G. J. S. Litjens, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); R. Elliott, Case Western Reserve Univ. (United States); N. Shih, M. Feldman, Univ. of Pennsylvania (United States); J. O. Barentsz, C. A. Hulsbergen - van de Kaa, I. Kovacs, H. J. Huisman, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); A. Madabhushi, Case Western Reserve Univ. (United States)
- 9035 13 **A prostate MRI atlas of biochemical failures following cancer treatment** [9035-38]
M. Rusu, Case Western Reserve Univ. (United States); J. Kurhanewicz, Univ. of California, San Francisco (United States); A. Tewari, Icahn School of Medicine at Mount Sinai Hospital (United States); A. Madabhushi, Case Western Reserve Univ. (United States)

MUSCULOSKELETAL AND MISCELLANEOUS

- 9035 14 **Dynamic automated synovial imaging (DASI) for differential diagnosis of rheumatoid arthritis** [9035-39]
E. Grisan, Univ. degli Studi di Padova (Italy); B. Raffener, Univ. degli Studi di Padova (Italy) and General Hospital Bolzano (Italy); A. Coran, Giovanni XXIII Nursing Home (Italy); G. Rizzo, L. Ciprian, R. Stramare, Univ. degli Studi di Padova (Italy)
- 9035 15 **Automated identification of spinal cord and vertebrae on sagittal MRI** [9035-40]
C. Zhou, H.-P. Chan, Q. Dong, B. He, J. Wei, L. M. Hadjiiski, D. Couriel, Univ. of Michigan (United States)
- 9035 16 **Adaptive geodesic transform for segmentation of vertebrae on CT images** [9035-41]
B. Gaonkar, Siemens Medical Solutions USA, Inc. (United States) and Univ. of Pennsylvania (United States); L. Shu, G. Hermosillo, Y. Zhan, Siemens Medical Solutions USA, Inc. (United States)

- 9035 17 **2D segmentation of intervertebral discs and its degree of degeneration from T2-weighted magnetic resonance images** [9035-42]
I. Castro-Mateos, J. M. Pozo, The Univ. of Sheffield (United Kingdom); A. Lazary, National Ctr. for Spinal Disorders (Hungary); A. F. Frangi, The Univ. of Sheffield (United Kingdom)
- 9035 18 **Prediction of treatment response and metastatic disease in soft tissue sarcoma** [9035-43]
H. Farhidzadeh, M. Zhou, D. B. Goldgof, L. O. Hall, Univ. of South Florida (United States); M. Raghavan, R. A. Gatenby, H. Lee Moffitt Cancer Ctr. & Research Institute (United States)
- 9035 19 **Automatic detection and segmentation of liver metastatic lesions on serial CT examinations** [9035-44]
A. Ben Cohen, I. Diamant, Tel Aviv Univ. (Israel); E. Klang, M. Amitai, Sheba Medical Ctr. (Israel); H. Greenspan, Tel Aviv Univ. (Israel)

BREAST II

- 9035 1A **Identification of corresponding lesions in multiple mammographic views using star-shaped iso-contours** [9035-45]
R. Wiemker, D. Kutra, H. Heese, T. Buelow, Philips Research Hamburg (Germany)
- 9035 1B **Boosting classification performance in computer aided diagnosis of breast masses in raw full-field digital mammography using processed and screen film images** [9035-46]
T. Kooi, N. Karssemeijer, Radboud Univ. Nijmegen Medical Ctr. (Netherlands)
- 9035 1C **Lesion classification using clinical and visual data fusion by multiple kernel learning** [9035-47]
P. Kisilev, IBM Research Haifa (Israel); S. Hashoul, IBM Research Haifa (Israel) and Carmel Medical Ctr. (Israel); E. Walach, A. Tzadok, IBM Research Haifa (Israel)
- 9035 1D **Breast density and parenchymal texture measures as potential risk factors for estrogen-receptor positive breast cancer** [9035-48]
B. M. Keller, J. Chen, E. F. Conant, D. Kontos, Univ. of Pennsylvania (United States)
- 9035 1E **Ultrasound breast lesion segmentation using adaptive parameters** [9035-49]
B. H. Cho, Y. K. Seong, J. Kim, Samsung Advanced Institute of Technology (Korea, Republic of); Z. Liu, Z. Hao, Samsung Advanced Institute of Technology (China); E. Y. Ko, Samsung Medical Ctr. (Korea, Republic of); K.-G. Woo, Samsung Advanced Institute of Technology (China)

LUNG, CHEST, AND ABDOMEN II

- 9035 1F **Comparison of CLASS and ITK-SNAP in segmentation of urinary bladder in CT urography** [9035-50]
K. Cha, L. Hadjiiski, H.-P. Chan, E. M. Caoili, R. H. Cohan, C. Zhou, Univ. of Michigan (United States)

- 9035 1G **Abdominal lymphadenopathy detection using random forest** [9035-51]
K. M. Cherry, S. Wang, E. B. Turkbey, R. M. Summers, National Institutes of Health (United States)
- 9035 1H **A new classifier fusion method based on confusion matrix and classification confidence for recognizing common CT imaging signs of lung diseases** [9035-52]
L. Ma, X. Liu, L. Song, Y. Liu, Beijing Institute of Technology (China); C. Zhou, X. Zhao, Y. Zhao, Chinese Academy of Medical Sciences (China)
- 9035 1I **Automated detection and quantification of micronodules in thoracic CT scans to identify subjects at risk for silicosis** [9035-53]
C. Jacobs, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); S. H. T. Opdam, Technische Univ. Eindhoven (Netherlands); E. M. van Rikxoort, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); O. M. Mets, Univ. Medical Ctr. Utrecht (Netherlands); J. Rooyackers, Utrecht Univ. (Netherlands); P. A. de Jong, Univ. Medical Ctr. Utrecht (Netherlands); M. Prokop, B. van Ginneken, Radboud Univ. Nijmegen Medical Ctr. (Netherlands)
- 9035 1J **Multiple-instance learning for computer-aided detection of tuberculosis** [9035-54]
J. Melendez, C. I. Sánchez, R. H. H. M. Philipsen, P. Maduskar, B. van Ginneken, Radboud Univ. Nijmegen Medical Ctr. (Netherlands)
- 9035 1K **Seamless insertion of real pulmonary nodules in chest CT exams** [9035-55]
A. Pezeshk, B. Sahiner, R. Zeng, A. Wunderlich, W. Chen, N. Petrick, U.S. Food and Drug Administration (United States)

POSTER SESSION: BREAST

- 9035 1L **Classification based micro-calcification detection using discriminative restricted Boltzmann machine in digitized mammograms** [9035-56]
S. Shin, Seoul National Univ. (Korea, Republic of); S. Lee, Samsung Electronics Co., Ltd. (Korea, Republic of); I. D. Yun, Hankuk Univ. of Foreign Studies (Korea, Republic of)
- 9035 1M **Automatic ultrasound image enhancement for 2D semi-automatic breast-lesion segmentation** [9035-57]
K. Lu, C. S. Hall, Philips Research North America (United States)
- 9035 1N **A content based framework for mass retrieval in mammograms** [9035-58]
S. Kaur, V. Sharma, S. Singh, S. Gupta, Panjab Univ. (India)
- 9035 1O **Development of a computer tool to detect and classify nodules in ultrasound breast images** [9035-59]
K. D. Marcomini, A. A. O. Carneiro, H. Schiabel, Univ. de São Paulo (Brazil)
- 9035 1P **A new mass classification system derived from multiple features and a trained MLP model** [9035-60]
M. Tan, The Univ. of Oklahoma (United States); J. Pu, Univ. of Pittsburgh (United States); B. Zheng, The Univ. of Oklahoma (United States)

- 9035 1Q **Automated breast tissue density assessment using high order regional texture descriptors in mammography** [9035-61]
Y. N. Law, A*STAR Bioinformatics Institute (Singapore); M. K. Lieng, Juniata College (United States); J. Li, Genome Institute of Singapore (Singapore); D. A.-A. Khoo, A*STAR Bioinformatics Institute (Singapore)
- 9035 1R **Improving breast mass detection using histogram of oriented gradients** [9035-62]
V. Pomponiu, H. Hariharan, Univ. of Pittsburgh (United States); B. Zheng, The Univ. of Oklahoma (United States); D. Gur, Univ. of Pittsburgh (United States)

Part Two

- 9035 1S **Detection of the nipple in automated 3D breast ultrasound using coronal slab-average-projection and cumulative probability map** [9035-63]
H. Kim, H. Hong, Seoul Women's Univ. (Korea, Republic of)
- 9035 1T **Bilateral image subtraction features for multivariate automated classification of breast cancer risk** [9035-64]
J. M. Celaya-Padilla, J. Rodriguez-Rojas, J. I. Galván-Tejada, A. Martínez-Torteya, V. Treviño, J. G. Tamez-Peña, Tecnológico de Monterrey (Mexico)
- 9035 1U **Roles of biologic breast tissue composition and quantitative image analysis of mammographic images in breast tumor characterization** [9035-65]
K. Drukker, M. L. Giger, The Univ. of Chicago (United States); F. Duewer, S. Malkov, Univ. of California, San Francisco (United States); C. I. Flowers, Univ. of South Florida, Tampa (United States); B. Joe, K. Kerlikowske., Univ. of California, San Francisco (United States); J. S. Drukteinis, H. Lee Moffitt Cancer Ctr. & Research Institute (United States); J. Shepherd, Univ. of California, San Francisco (United States)
- 9035 1V **New method for predicting estrogen receptor status utilizing breast MRI texture kinetic analysis** [9035-66]
B. Chaudhury, L. O. Hall, D. B. Goldgof, Univ. of South Florida (United States); R. A. Gatenby, R. Gillies, J. S. Drukteinis, H. Lee Moffitt Cancer Ctr. & Research Institute (United States)
- 9035 1W **Exploring perceptually similar cases with multi-dimensional scaling** [9035-67]
J. Wang, Y. Yang, M. N. Wernick, R. M. Nishikawa, Illinois Institute of Technology (United States)
- 9035 1X **Application of computer-extracted breast tissue texture features in predicting false-positive recalls from screening mammography** [9035-68]
S. Ray, J. Y. Choi, B. M. Keller, J. Chen, E. F. Conant, D. Kontos, Univ. of Pennsylvania (United States)
- 9035 1Y **Chest-wall segmentation in automated 3D breast ultrasound images using thoracic volume classification** [9035-69]
T. Tan, J. van Zelst, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); W. Zhang, QView Medical, Inc. (United States); R. M. Mann, B. Platel, N. Karssemeijer, Radboud Univ. Nijmegen Medical Ctr. (Netherlands)

- 9035 12 **Classification of breast lesions presenting as mass and non-mass lesions** [9035-70]
C. Gallego-Ortiz, A. L. Martel, Univ. of Toronto (Canada) and Sunnybrook Research Institute (Canada)

POSTER SESSION: HEAD, NECK, AND NOVEL

- 9035 20 **Computer-based assessment of left ventricular regional ejection fraction in patients after myocardial infarction** [9035-23]
S.-K. Teo, Y. Su, A*STAR Institute of High Performance Computing (Singapore); R. C. Tan, L. Zhong, National Heart Ctr. Singapore (Singapore) and Duke-NUS Graduate Medical School (Singapore)
- 9035 21 **Toward early diagnosis of arteriosclerotic diseases: collaborative detection of carotid artery calcifications by computer and dentists on dental panoramic radiographs** [9035-73]
C. Muramatsu, R. Takahashi, T. Hara, Gifu Univ. (Japan); T. Hayashi, Media Co., Ltd. (Japan); A. Katsumata, Asahi Univ. (Japan); X. Zhou, H. Fujita, Gifu Univ. (Japan)
- 9035 22 **Automatic classification of schizophrenia using resting-state functional language network via an adaptive learning algorithm** [9035-74]
M. Zhu, N. Jie, Institute of Automation (China); T. Jiang, Institute of Automation (China) and Univ. of Electronic Science and Technology of China (China)
- 9035 23 **Accurate discrimination of Alzheimer's disease from other dementia and/or normal subjects using SPECT specific volume analysis** [9035-75]
H. Iyatomi, Hosei Univ. (Japan); J. Hashimoto, F. Yoshii, T. Kazama, S. Kawada, Y. Imai, Tokai Univ. School of Medicine (Japan)
- 9035 24 **Automatic pathology classification using a single feature machine learning support-vector machines** [9035-76]
F. Yepes-Calderon, Children's Hospital Los Angeles (United States) and Univ. de Barcelona (Spain); F. Pedregosa, B. Thirion, INRIA Saclay - Île-de-France (France); Y. Wang, Arizona State Univ. (United States); N. Leporé, Univ. of Southern California (United States) and Children's Hospital Los Angeles (United States)
- 9035 26 **MRI signal and texture features for the prediction of MCI to Alzheimer's disease progression (First Place RFW All Conference Best Student Paper Award)** [9035-78]
A. Martínez -Torteya, J. A. Rodríguez-Rojas, J. M. Celaya-Padilla, J. I. Galván-Tejada, V. Treviño, J. G. Tamez-Peña, Tecnológico de Monterrey (Mexico)
- 9035 27 **Volume curtaining: a focus+context effect for multimodal volume visualization** [9035-80]
A. J. Fairfield, J. Plasencia, Arizona State Univ. (United States); Y. Jang, Sejong Univ. (Korea, Republic of); N. Theodore, N. R. Crawford, Barrow Neurosurgical Ctr. (United States); D. H. Frakes, R. Maciejewski, Arizona State Univ. (United States)
- 9035 28 **Multilevel image recognition using discriminative patches and kernel covariance descriptor** [9035-81]
L. Lu, J. Yao, E. Turkbey, R. M. Summers, National Institutes of Health (United States)

- 9035 29 **Surgical retained foreign object (RFO) prevention by computer aided detection (CAD)** [9035-82]
T. C. Marentis, L. Hadjiyiiski, A. R. Chaudhury, L. Rondon, N. Chronis, H.-P. Chan, Univ. of Michigan (United States)
- 9035 2A **Quantitative characterization of brain β -amyloid using a joint PiB/FDG PET image histogram** [9035-83]
J. J. Camp, D. P. Hanson, D. R. Holmes III, B. J. Kemp, M. L. Senjem, M. E. Murray, D. W. Dickson, J. E. Parisi, R. C. Petersen, V. J. Lowe, R. A. Robb, Mayo Clinic (United States)
- 9035 2B **Texture descriptors to distinguish radiation necrosis from recurrent brain tumors on multi-parametric MRI** [9035-84]
P. Tiwari, P. Prasanna, Case Western Reserve Univ. (United States); L. Rogers, L. Wolansky, C. Badve, A. Sloan, M. Cohen, Univ. Hospitals (United States); A. Madabhushi, Case Western Reserve Univ. (United States)

POSTER SESSION: LUNG, CHEST, AND ABDOMEN

- 9035 2C **Efficient 3D texture feature extraction from CT images for computer-aided diagnosis of pulmonary nodules** [9035-85]
F. Han, Stony Brook Univ. (China) and Northeastern Univ. (China); H. Wang, B. Song, Stony Brook Univ. (United States); G. Zhang, H. Lu, Fourth Military Medical Univ. (China); W. Moore, Z. Liang, Stony Brook Univ. (United States); H. Zhao, Northeastern Univ. (China)
- 9035 2D **A novel computer-aided detection system for pulmonary nodule identification in CT images** [9035-86]
H. Han, Stony Brook Univ. (United States); L. Li, College of Staten Island (United States); H. Wang, H. Zhang, W. Moore, Z. Liang, Stony Brook Univ. (United States)
- 9035 2E **Comparison of biophysical factors influencing on emphysema quantification with low-dose CT** [9035-87]
C. H. Heo, Seoul National Univ. (Korea, Republic of); J. H. Kim, Seoul National Univ. (Korea, Republic of) and Seoul National Univ. Hospital (Korea, Republic of)
- 9035 2F **Microstructure analysis of the secondary pulmonary lobules by 3D synchrotron radiation CT** [9035-88]
Y. Fukuoka, Y. Kawata, N. Niki, Univ. of Tokushima (Japan); K. Umetani, Japan Synchrotron Radiation Research Institute (Japan); Y. Nakano, Shiga Univ. of Medical Science (Japan); H. Ohmatsu, National Cancer Ctr. Hospital East (Japan); N. Moriyama, Tokyo Midtown Medical Ctr. (Japan); H. Itoh, Univ. of Fukui (Japan)
- 9035 2G **Wavelet based rotation invariant texture feature for lung tissue classification and retrieval** [9035-89]
J. K. Dash, S. Mukhopadhyay, R. Das Gupta, Indian Institute of Technology Kharagpur (India); M. K. Garg, N. Prabhakar, N. Khandelwal, Postgraduate Institute of Medical Education & Research (India)
- 9035 2H **Effect of image variation on computer-aided detection systems** [9035-90]
S. P. Rabbani, KTH Royal Institute of Technology (Sweden); P. Maduskar, R. H. H. M. Philipsen, L. Hogeweg, B. van Ginneken, Radboud Univ. Nijmegen Medical Ctr. (Netherlands)

- 9035 2I **3D mapping of airway wall thickening in asthma with MSCT: a level set approach** [9035-91]
C. Fetita, Télécom SudParis, Institut Mines-Telecom (France) and MAP5, CNRS (France);
P. Brillet, Univ. Paris 13 (France); R. Hartley, Glenfield Hospital, Univ. of Leicester (United
Kingdom); P. A. Grenier, Univ. Pierre et Marie Curie (France); C. Brightling, Glenfield
Hospital, Univ. of Leicester (United Kingdom)
- 9035 2J **3D intrathoracic region definition and its application to PET-CT analysis** [9035-92]
R. Cheirsilp, R. Bascom, T. W. Allen, W. E. Higgins, The Pennsylvania State Univ. (United
States)
- 9035 2K **Lung texture classification using bag of visual words** [9035-93]
M. Asherov, I. Diamant, H. Greenspan, Tel-Aviv Univ. (Israel)
- 9035 2L **Automated segmentation of murine lung tumors in x-ray micro-CT images** [9035-94]
J. K. Y. Swee, Imperial College London (United Kingdom); C. Sheridan, E. de Bruin,
J. Downward, F. Lassailly, Cancer Research UK (United Kingdom); L. Pizarro, Univ. College
London (United Kingdom)
- 9035 2M **Longitudinal follow-up study of smoking-induced emphysema progression in low-dose CT
screening of lung cancer** [9035-95]
H. Suzuki, M. Matsuihiro, Y. Kawata, N. Niki, Univ. of Tokushima (Japan); Y. Nakano, Shiga
Univ. of Medical Science (Japan); H. Ohmatsu, National Cancer Ctr. Hospital East (Japan);
M. Kusumoto, T. Tsuchida, National Cancer Ctr. Hospital (Japan); K. Eguchi, Teikyo Univ.
School of Medicine (Japan); K. Kaneko, Tokyo Health Service Association (Japan);
N. Moriyama, Tokyo Midtown Medical Ctr. (Japan)
- 9035 2N **Potential usefulness of a topic model-based categorization of lung cancers as quantitative
CT biomarkers for predicting the recurrence risk after curative resection** [9035-96]
Y. Kawata, N. Niki, Univ. of Tokushima (Japan); H. Ohmatsu, K. Aokage, National Cancer
Ctr. Hospital East (Japan); M. Kusumoto, T. Tsuchida, National Cancer Ctr. Hospital (Japan);
M. Satake, National Cancer Ctr. Hospital East (Japan); K. Eguchi, Teikyo Univ. School of
Medicine (Japan); M. Kaneko, Tokyo Health Service Association (Japan); N. Moriyama,
Tokyo Midtown Medical Ctr. (Japan)
- 9035 2O **Computerized organ localization in abdominal CT volume with context-driven generalized
Hough transform** [9035-97]
J. Liu, Q. Li, Shanghai Advanced Research Institute (China)
- 9035 2P **Segmentation of urinary bladder in CT urography (CTU) using CLASS with enhanced
contour conjoint procedure** [9035-98]
K. Cha, L. Hadjiiski, H.-P. Chan, R. H. Cohan, E. M. Caoili, C. Zhou, Univ. of Michigan (United
States)
- 9035 2Q **Level-set based free fluid segmentation with improved initialization using region growing in
3D ultrasound sonography** [9035-99]
D. H. Kim, KAIST (Korea, Republic of); K. N. Plataniotis, Univ. of Toronto (Canada); Y. M. Ro,
KAIST (Korea, Republic of)

- 9035 2R **Performance of an automated renal segmentation algorithm based on morphological erosion and connectivity** [9035-100]
B. Abiri, B. Park, H. Chandarana, A. Mikheev, New York Univ. School of Medicine (United States); V. S. Lee, Univ. of Utah Health Systems (United States); H. Rusinek, New York Univ. School of Medicine (United States)
- 9035 2S **COMPASS-based ureter segmentation in CT urography (CTU)** [9035-101]
D. Zick, L. Hadjiyiyski, H.-P. Chan, R. H. Cohan, E. M. Caoili, C. Zhou, J. Wei, Univ. of Michigan (United States)
- 9035 2T **Ultrasound based computer-aided-diagnosis of kidneys for pediatric hydronephrosis** [9035-102]
J. J. Cerrolaza, C. A. Peters, A. D. Martin, E. Myers, Children's National Medical Ctr. (United States); N. Safdar, M. G. Linguraru, Children's National Medical Ctr. (United States) and George Washington Univ. (United States)
- 9035 2U **Automated abdominal lymph node segmentation based on RST analysis and SVM** [9035-103]
Y. Nimura, Y. Hayashi, Nagoya Univ. (Japan); T. Kitasaka, Aichi Institute of Technology (Japan); K. Furukawa, Nagoya Univ. (Japan); K. Misawa, Aichi Cancer Ctr. Hospital (Japan); K. Mori, Nagoya Univ. (Japan)
- 9035 2V **A universal approach for automatic organ segmentations on 3D CT images based on organ localization and 3D GrabCut** [9035-104]
X. Zhou, T. Ito, Gifu Univ. (Japan); X. Zhou, Nagoya Bunri Univ. (Japan); H. Chen, T. Hara, R. Yokoyama, Gifu Univ. (Japan); M. Kanematsu, Gifu Univ. Hospital (Japan); H. Hoshi, H. Fujita, Gifu Univ. (Japan)

POSTER SESSION: PROSTATE AND COLON

- 9035 2W **A novel colonic polyp volume segmentation method for computer tomographic colonography** [9035-105]
H. Wang, Stony Brook Univ. (United States) and Beihang Univ. (United States); L. C. Li, College of Staten Island (United States); H. Han, B. Song, H. Peng, Stony Brook Univ. (United States); Y. Wang, L. Wang, BeiHang Univ. (China); Z. Liang, Stony Brook Univ. (United States)
- 9035 2X **Progressive region-based colon extraction for computer-aided detection and quantitative imaging in cathartic and non-cathartic CT colonography** [9035-106]
J. J. Näppi, Y. Ryu, H. Yoshida, Massachusetts General Hospital (United States) and Harvard Medical School (United States)
- 9035 2Y **GISentinel: a software platform for automatic ulcer detection on capsule endoscopy videos** [9035-107]
S. Yi, H. Jiao, F. Meng, Xyken, LLC (United States); J. A. Leighton, P. Shabana, L. Rentz, Mayo Clinic (United States)

POSTER SESSION: VESSELS, HEART, AND EYE

- 9035 2Z **Retinal image quality assessment using generic features** [9035-108]
M. Fasih, J. M. P. Langlois, Ecole Polytechnique de Montréal (Canada); H. Ben Tahar, DIAGNOS Inc. (Canada); F. Cheriet, Ecole Polytechnique de Montréal (Canada)
- 9035 30 **A boosted optimal linear learner for retinal vessel segmentation** [9035-110]
E. Poletti, E. Grisan, Univ. degli Studi di Padova (Italy)
- 9035 31 **Glaucoma detection based on local binary patterns in fundus photographs** [9035-111]
M. Alsheh Ali, T. Hurtut, Univ. Paris Descartes (France) and École Polytechnique de Montréal (Canada); T. Faucon, DIAGNOS inc. (Canada); F. Cheriet, Ecole Polytechnique de Montréal (Canada)
- 9035 32 **Automatic multiresolution age-related macular degeneration detection from fundus images** [9035-112]
M. Garnier, T. Hurtut, Univ. Paris Descartes (France) and École Polytechnique de Montréal (Canada); H. Ben Tahar, DIAGNOS inc. (Canada); F. Cheriet, Ecole Polytechnique de Montréal (Canada)
- 9035 33 **Preliminary study on differentiation between glaucomatous and non-glaucomatous eyes on stereo fundus images using cup gradient models** [9035-114]
C. Muramatsu, Gifu Univ. (Japan); Y. Hatanaka, Univ. of Shiga Prefecture (Japan); K. Ishida, A. Sawada, T. Yamamoto, H. Fujita, Gifu Univ. (Japan)
- 9035 35 **From medical imaging to computer simulation of fractional flow reserve in four coronary artery trees** [9035-116]
S. Melchionna, S. Fortini, CNR, Istituto per i Processi Chimico-Fisici (Italy); M. Bernaschi, M. Bisson, CNR, Istituto per le Applicazioni del Calcolo (Italy); N. Kang, H.-E. Lee, Samsung Advanced Institute of Technology (Korea, Republic of)
- 9035 36 **Learning-based automatic detection of severe coronary stenoses in CT angiographies** [9035-117]
I. Melki, Univ. Paris-Est Marne-la-Vallée (France) and GE Healthcare (France); C. Cardon, N. Gogin, GE Healthcare (France); H. Talbot, L. Najman, Univ. Paris-Est Marne-la-Vallée (France)
- 9035 37 **Time-resolved volumetric MRI blood flow: a Doppler ultrasound perspective** [9035-118]
R. van Pelt, Technische Univ. Eindhoven (Netherlands); J. Oliván Bescós, Philips Healthcare (Netherlands); E. Nagel, King's College London (United Kingdom); A. Vilanova, Technische Univ. Eindhoven (Netherlands)

POSTER SESSION: MUSCULOSKELETAL AND MISCELLANEOUS

- 9035 38 **Description of patellar movement by 3D parameters obtained from dynamic CT acquisition** [9035-120]
M. de Sá Rebelo, R. A. Moreno, R. G. Gobbi, G. L. Camanho, L. F. R. de Ávila, M. K. Demange, J. R. Pecora, M. A. Gutierrez, Univ. de São Paulo (Brazil)

- 9035 39 **Wide association study of radiological features that predict future knee OA pain: data from the OAI** [9035-121]
J. I. Galván-Tejada, J. M. Celaya-Padilla, A. Martínez-Torteya, J. Rodríguez-Rojas, V. Treviño, J. G. Tamez-Peña, Tecnológico de Monterrey (Mexico)
- 9035 3A **Vertebral degenerative disc disease severity evaluation using random forest classification** [9035-122]
H. E. Muñoz, J. Yao, National Institutes of Health (United States); J. E. Burns, Y. Pham, Univ. of California, Irvine (United States); J. Stieger, R. M. Summers, National Institutes of Health (United States)
- 9035 3B **Registration and color calibration for dermoscopy images in time-course analysis** [9035-123]
D. Furusho, H. Iyatomi, Hosei Univ. (Japan)
- 9035 3C **Towards quantitative assessment of calciphylaxis** [9035-124]
T. M. Deserno, I. Sárándi, A. Jose, D. Haak, S. Jonas, P. Specht, V. Brandenburg, RWTH Aachen (Germany)
- 9035 3D **Towards robust identification and tracking of nevi in sparse photographic time series** [9035-125]
J. Vogel, A. Dului, Technische Univ. München (Germany); Y. Oyamada, Technische Univ. München (Japan) and Waseda Univ. (Japan); J. Gardiazabal, Technische Univ. München (Germany); T. Lasser, Technische Univ. München (Germany) and Helmholtz Zentrum München GmbH (Germany); M. Ziai, R. Hein, N. Navab, Technische Univ. München (Germany)
- 9035 3E **Evaluation of a computer-aided skin cancer diagnosis system for conventional digital photography with manual segmentation** [9035-126]
A. Huang, National Central Univ. (Taiwan); W.-Y. Chang, Kaohsiung Medical Univ. (Taiwan) and E-Da Hospital, I-Shou Univ. (Taiwan); C.-H. Hsieh, H.-I. Liu, National Central Univ. (Taiwan); G. S. Chen, Kaohsiung Medical Univ. (Taiwan)
- 9035 3F **Computer aided diagnosis of diabetic peripheral neuropathy** [9035-127]
V. Chekh, Univ. of New Mexico (United States); P. Soliz, E. McGrew, S. Barriga, VisionQuest Biomedical, LLC (United States); M. Burge, S. Luan, Univ. of New Mexico (United States)
- 9035 3G **An automatic early stage alveolar-bone-resorption evaluation method on digital dental panoramic radiographs** [9035-128]
M. Zhang, Gifu Univ. (Japan); A. Katsumata, Asahi Univ. (Japan); C. Muramatsu, T. Hara, Gifu Univ. (Japan); H. Suzuki, Asahi Univ. (Japan); H. Fujita, Gifu Univ. (Japan)
- 9035 3H **A method for automatic liver segmentation from multi-phase contrast-enhanced CT images** [9035-129]
R. Yuan, M. Luo, S. Wang, Huazhong Univ. of Science and Technology (China); L. Wang, Huazhong Univ. of Science and Technology (China) and Raycan Technology Co., Ltd. (China); Q. Xie, Huazhong Univ. of Science and Technology (China)
- 9035 3I **Classification of weak specular reflections in laparoscopic images** [9035-130]
B. Chakraborty, J. M. Marcinczak, R.-R. Grigat, Technische Univ. Hamburg-Harburg (Germany)

- 9035 3J **Active shape models incorporating isolated landmarks for medical image annotation**
[9035-131]
T. Norajitra, H.-P. Meinzer, B. Stieltjes, K. H. Maier-Hein, Deutsches Krebsforschungszentrum
(Germany)
- 9035 3K **Texture feature based liver lesion classification** [9035-132]
Y. Doron, N. Mayer-Wolf, I. Diamant, H. Greenspan, Tel-Aviv Univ. (Israel)
- 9035 3L **Automatic seed selection for segmentation of liver cirrhosis in laparoscopic sequences**
[9035-133]
R. Sinha, J. M. Marcinczak, R.-R. Grigat, Technische Univ. Hamburg-Harburg (Germany)
- 9035 3M **Infective endocarditis detection through SPECT/CT images digital processing** [9035-134]
A. Moreno, R. Valdés, L. Jiménez, Univ. Autónoma Metropolitana (Mexico); E. Vallejo, ABC
Medical Ctr. Santa Fe (Mexico); S. Hernández, G. Soto, Instituto Nacional de Cardiología -
Ignacio Chávez (Mexico)
- 9035 3N **A preliminary study for fully automated quantification of psoriasis severity using image
mapping** [9035-136]
K. Mukai, H. Iyatomi, Hosei Univ. (Japan)

Author Index

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Head, Neck, and Novel Methods

Marius George Linguraru, Children's National Medical Center
(United States)
Eva M. van Rikxoort, Radboud University Nijmegen Medical Center
(Netherlands)

Prostate and Colon I

Janne J. Näppi, Massachusetts General Hospital (United States) and
Harvard Medical School (United States)
Maryellen L. Giger, The University of Chicago (United States)

Vessels, Heart, and Eye I

Bram van Ginneken, Radboud University Nijmegen Medical Center
(Netherlands)
Thomas M. Deserno, RWTH Aachen (Germany)

Keynote: Joint Session with Conferences 9035 and 9039

Heinz U. Lemke, Computer Assisted Radiology and Surgery
(Germany)

Lung, Chest, and Abdomen I

Nicholas A. Petrick, U.S. Food and Drug Administration (United States)
Jong Hyo Kim, Seoul National University College of Medicine
(Korea, Republic of)

Vessels, Heart, and Eye II

Marleen de Bruijne, Erasmus MC (Netherlands) and University of Copenhagen (Denmark)

Clarisa I. Sánchez, Radboud University Nijmegen Medical Center (Netherlands)

Breast I

Joseph Y. Lo, Duke University Medical Center (United States)

Georgia D. Tourassi, Oak Ridge National Laboratory (United States)

Prostate and Colon II

Ronald M. Summers, National Institutes of Health (United States)

Musculoskeletal and Miscellaneous

Axel Wismüller, University of Rochester Medical Center (United States)

Michael F. McNitt-Gray, University of California, Los Angeles (United States)

Breast II

Horst Karl Hahn, Fraunhofer MEVIS (Germany)

Hiroshi Fujita, Gifu University School of Medicine (Japan)

Lung, Chest, and Abdomen II

Kyongtae Ty Bae, University of Pittsburgh Medical Center (United States)

Rafael Wiemker, Philips Research (Germany)

Awards

Robert F. Wagner Award

Robert F. Wagner was an active scientist in the SPIE Medical Imaging meeting, starting with the first meeting in 1972 and continuing throughout his career. He ensured that the BRH, and subsequently the CDRH, was a sponsor for the early and subsequent Medical Imaging meetings, helping to launch and ensure the historical success of the meeting. The Robert F. Wagner All-Conference Best Student Paper Award (established 2014) is acknowledgment of his many important contributions to the Medical Imaging meeting and his many important advances to the field of medical imaging.

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2014 Recipients:

First Place: **MRI signal and texture features for the prediction of MCI to Alzheimer's disease progression** (9035-78)

A. Martínez-Torteya, J. A. Rodríguez-Rojas, J. M. Celaya-Padilla, J. I. Galván-Tejada, V. M. Treviño-Alvarado, Sr., J. G. Tamez-Peña, Tecnológico de Monterrey (Mexico)

Second Place: **Distinguishing benign confounding treatment changes from residual prostate cancer on MRI following laser ablation** (9036-49)

G. Litjens, H. Huisman, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); R. Elliot, Case Western Reserve Univ. (United States); N. Shih, M. Feldman, Univ. of Pennsylvania (United States); S. Viswanath, Case Western Reserve Univ. (United States); J. Futterer, J. Bomers, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); A. Madabhushi, Case Western Reserve Univ. (United States)